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TI Pyrrolo thiophene cyan dye-forming couplers - for photographic materials having excellent colour reproducibility.

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Cyan dye-forming couplers of formula (I), and (II) are new. R1, R2 and R3 are independently H or a substit. gp.; X = H or a gp. capable of splitting off by coupling reaction with the oxidn. prod. of an aromatic prim. amine deriv. Ag halide colour photographic materials contg. (I) or (II) are also claimed.

R1 is e.g. halogen, 1-36C aliphatic gp., 6-3C aryl gp., heterocycl, alkoxy, aryloxy, etc. R2 and R3 are pref. electron-attracting gp. having Hammett's sigma p value of at least 0.35 (e.g. CN, acyl, carboxyl, carbamoyl, NO₂ or sulphamoyl). X is e.g. halogen, alkoxy, aryloxy, sulphonyloxy, acylamino, heterocycl etc.

ADVANTAGE - (I) and (II) can form cyan dyes having excellent absorption characteristics and high fastness.

In an example of the prepn., to 50 ml of an ethanol soln. contg. 25.0 mmol of (I-1) was added 1 ml of pyrrolidone. To this was further added dropwise 25.0 mmol of (I-2). The mixt. was heated for 8 hrs. under reflux. The reaction prod. was purified by silica gel chromatography. Thus, 13.6 mmol of (I-3) was obtd. in a yield of 54.4%. 10.0 mmol of (I-3) was dissolved in 10 g of triethyl phosphite, and heated for 5 hrs. under reflux. The reaction prod. was purified by silica gel chromatography to give 4.53 mmol of (I-4) (yield: 45.3%). When R1 = H, R2 = ethoxycarbonyl. R3 = dodecloxycarbonylphenyl and X = H, the product has m.pt. of 128-132 deg.C.